In light of the large amount of rain that has fallen recently and the flooding that has resulted, this edition of Health and Safety News lays out information related to flooding. The information comes from the Center for Disease Control and Prevention’s (CDC) website (http://emergency.cdc.gov/disasters/floods/readiness.asp) as well as The Homeowners Guide website (http://www.homeownersinsurance.org/), so for reading more about the topics discussed, please visit the sites. If there is a topic highlighted in blue that you would like to read more about, right click on the mouse and select Open Hyperlink.

Key Facts About Flood Readiness

Preparing for a Flood

Here are some basic steps to take to prepare for the storm:

- Contact the local county geologist or county planning department to find out if your home is located in a flash-flood-prone area or landslide-prone area.
- Learn about your community's emergency plans, warning signals, evacuation routes, and locations of emergency shelters.
- Plan and practice a flood evacuation route with your family.
- Ask an out-of-state relative or friend to be the "family contact" in case your family is separated during a flood. Make sure everyone in your family knows the name, address, and phone number of this contact person.
• Post emergency phone numbers at every phone.

• Inform local authorities about any special needs, i.e., elderly or bedridden people, or anyone with a disability.
• Identify potential home hazards and know how to secure or protect them before the flood strikes. Be prepared to turn off electrical power when there is standing water, fallen power lines, or before your evacuation. Turn off gas and water supplies before you evacuate. Secure structurally unstable building materials.
• Buy a fire extinguisher and make sure your family knows where it is and how to use it.
• Buy and install sump pumps with back-up power.
• Have a licensed electrician raise electric components (switches, sockets, circuit breakers and wiring) at least 12” above your home's projected flood elevation.
• For drains, toilets, and other sewer connections, install backflow valves or plugs to prevent floodwaters from entering.
• Anchor fuel tanks which can contaminate your basement if torn free. An unanchored tank outside can be swept downstream and damage other houses.

If you are under a flood watch or warning:

• Gather the emergency supplies you previously stocked in your home and stay tuned to local radio or television stations for updates.
• Turn off all utilities at the main power switch and close the main gas valve if evacuation appears necessary.
• Have your immunization records handy or be aware of your last tetanus shot, in case you should receive a puncture wound or a wound becomes contaminated during or after the flood.
• Fill bathtubs, sinks and plastic soda bottles with clean water. Sanitize the sinks and tubs first by using bleach. Rinse and fill with clean water.
• Bring outdoor possessions, such as lawn furniture, grills and trash cans inside or tie them down securely.

Emergency Supplies You Will Need

You should stock your home with supplies that may be needed during the emergency period. At a minimum, these supplies should include:

• Several clean containers for water, large enough for a 3-5 day supply of water (about five gallons for each person).
• A 3-5 day supply of non-perishable food and a non-electric can opener.
• A first aid kit and manual and prescription medicines and special medical needs.
• A battery-powered radio, flashlights, and extra batteries.
• Sleeping bags or extra blankets.
• Water-purifying supplies, such as chlorine or iodine tablets or unscented, ordinary household chlorine bleach.
• Baby food and/or prepared formula, diapers, and other baby supplies.
• Disposable cleaning cloths, such as "baby wipes" for the whole family to use in case bathing facilities are not available.
• Personal hygiene supplies such as soap, toothpaste, sanitary napkins, etc.
• An emergency kit for your car with food, flares, booster cables, maps, tools, a first aid kit, fire extinguisher, sleeping bags, etc.
• Rubber boots, sturdy shoes, and waterproof gloves.
• Insect repellent containing DEET or Picaridin, screens, or long-sleeved and long-legged clothing for protection from mosquitoes which may gather in pooled water remaining after the flood. (More information about these and other recommended repellents can be found in the fact sheet Updated Information Regarding Insect Repellents.)

Preparing to Evacuate

Expect the need to evacuate and prepare for it. When a flood watch is issued, you should:

• Fill your vehicle’s gas tank and make sure the emergency kit for your car is ready.
• If no vehicle is available, make arrangements with friends or family for transportation.
• Identify essential documents such as medical records, insurance card along with ID cards and put in waterproof material to carry with you during evacuation.
• Fill your clean water containers.
• If you have a pet, identify a shelter designated for pets.
• Review your emergency plans and supplies, checking to see if any items are missing.
• Tune in the radio or television for weather updates.
• Listen for disaster sirens and warning signals.
• Put livestock and family pets in a safe area. Due to food and sanitation requirements, emergency shelters cannot accept animals.
• Adjust the thermostat on refrigerators and freezers to the coolest possible temperature.

If You Are Ordered to Evacuate

You should never ignore an evacuation order. Authorities will direct you to leave if you are in a low-lying area, or within the greatest potential path of the rising waters. If a flood warning is issued for your area or you are directed by authorities to evacuate the area:

• Take only essential items with you.
• If you have time, turn off the gas, electricity, and water.
• Disconnect appliances to prevent electrical shock when power is restored.
• Follow the designated evacuation routes and expect heavy traffic.
• Do not attempt to drive or walk across creeks or flooded roads.

If You Are Ordered NOT to Evacuate

To get through the storm in the safest possible manner:

• Monitor the radio or television for weather updates.
• Prepare to evacuate to a shelter or to a neighbor's home if your home is damaged, or if you are instructed to do so by emergency personnel.
Flood Recovery

Prevent Illness From Food and Water After a Flood

Prevent illness from FOOD

Identify and throw away food that may not be safe to eat. Throw away food that may have come in contact with flood or storm water. Throw away canned foods that are bulging, opened, or damaged. Throw away food that has an unusual odor, color, or texture. Throw away perishable foods (including meat, poultry, fish, eggs and leftovers) that have been above 40°F for 2 hours or more. Thawed food that contains ice crystals or is 40°F or below can be refrozen or cooked. If cans have come in contact with floodwater or storm water, remove the labels, wash the cans, and dip them in a solution of 1 cup (240 milliliters) of bleach in 5 gallons of water. Relabel the cans with a marker.

Store food safely. While the power is out, keep the refrigerator and freezer doors closed as much as possible. Add block ice or dry ice to your refrigerator if the electricity is expected to be off longer than 4 hours. Wear heavy gloves when handling ice.

Prevent illness from WATER

Listen to and follow public announcements. Local authorities will tell you if tap water is safe to drink or to use for cooking or bathing. If the water is not safe to use, follow local instructions to use bottled water or to boil or disinfect water for cooking, cleaning, or bathing.

Correctly boil or disinfect water. Hold water at a rolling boil for 1 minute to kill bacteria. If you can’t boil water, add 1/8 teaspoon (approximately 0.75 mL) of newly purchased, unscented liquid household bleach per gallon of water. Stir the water well, and let it stand for 30 minutes before you use it. You can use water-purifying tablets instead of boiling water or using bleach. For infants, use only pre-prepared canned baby formula. Do not use powdered formulas prepared with treated water. Clean children’s toys that have come in contact with water. Use a solution of 1 cup of bleach in 5 gallons of water to clean the toys. Let toys air dry after cleaning.

Prevent and treat OTHER ILLNESS and INJURIES

Prevent carbon monoxide poisoning. Carbon monoxide is an odorless, colorless gas that is produced by many types of equipment and is poisonous to breathe. Don’t use a generator, pressure washer, charcoal grill, camp stove, or other gasoline- or charcoal-burning device inside your home, basement, or garage or near a window, door, or vent. Don't run a car or truck inside a garage attached to your house, even if you leave the door open. Don’t heat your house with a gas oven. If your carbon monoxide detector sounds, leave your home immediately and call 911. Seek prompt medical attention if you suspect carbon monoxide poisoning and are feeling dizzy, light-headed, or nauseated.

Avoid floodwater and mosquitoes. Follow all warnings about water on roadways. Do not drive vehicles or heavy equipment through water. If you have to work in or near floodwater, wear a life jacket. If you are caught in an area where floodwater is rising, wear a life jacket, or use some other type of flotation device. Prevent mosquito bites by wearing long pants, socks, and long-sleeved shirts and by using insect repellents that contain DEET or Picaridin. More information about these and other recommended
repellents can be found in the fact sheet “Updated Information Regarding Insect Repellents” at www.cdc.gov/ncidod/dvbid/westnile/RepellentUpdates.htm.

**Avoid unstable buildings and structures.** Stay away from damaged buildings or structures until they have been examined and certified as safe by a building inspector or other government authority. Leave immediately if you hear shifting or unusual noises that signal that the structure is about to fall.

**Beware of wild or stray animals.** Avoid wild or stray animals. Take appropriate precautions to avoid animal bites and rabies exposure (see www.cdc.gov/rabies/exposure). Call local authorities to handle animals. Get rid of dead animals according to local guidelines.

**Beware of electrical and fire hazards.** NEVER touch a fallen power line. Call the power company to report fallen power lines. Avoid contact with overhead power lines during cleanup and other activities. If electrical circuits and equipment have gotten wet or are in or near water, turn off the power at the main breaker or fuse on the service panel. Do not turn the power back on until electrical equipment has been inspected by a qualified electrician. Do not burn candles near flammable items or leave the candle unattended. If possible, use flashlights or other battery-operated lights instead of candles.

**Beware of hazardous materials.** Wear protective clothing and gear (for example, a respirator if needed) when handling hazardous materials. Wash skin that may have come in contact with hazardous chemicals. Contact local authorities if you are not sure about how to handle or get rid of hazardous materials.

**Clean up and prevent mold growth.** Clean up and dry out the building quickly (within 24 to 48 hours). Open doors and windows. Use fans to dry out the building. To prevent mold growth, clean wet items and surfaces with detergent and water. To remove mold growth, wear rubber gloves, open windows and doors, and clean with a bleach solution of 1 cup of bleach in 1 gallon of water. Throw away porous items (for example, carpet and upholstered furniture) that cannot be dried quickly. Fix any leaks in roofs, walls, or plumbing.

**Pace yourself and get support.** Be alert to physical and emotional exhaustion or strain. Set priorities for cleanup tasks, and pace the work. Try not to work alone. Don’t get exhausted. Ask your family members, friends, or professionals for support. If needed, seek professional help.

**Prevent musculoskeletal injuries.** Use teams of two or more people to move bulky objects. Avoid lifting any material that weighs more than 50 pounds (per person).

**Stay cool.** When it’s hot, stay in air-conditioned buildings; take breaks in shaded areas or in cool rooms; drink water and nonalcoholic fluids often; wear lightweight, light-colored, loose-fitting clothing; and do outdoor activities during cooler hours.

**Treat wounds.** Clean out all open wounds and cuts with soap and clean water. Apply an antibiotic ointment. Contact a doctor to find out whether more treatment is needed (such as a tetanus shot). If a wound gets red, swells, or drains, seek immediate medical attention.

**Wash your hands.** Use soap and water to wash your hands. If water isn’t available, you can use alcohol-based products made for washing hands.

**Wear protective gear for cleanup work.** Wear hard hats, goggles, heavy work gloves, and watertight boots with steel toes and insoles (not just steel shank). Wear earplugs or protective headphones to reduce risk from equipment noise.
Returning Home After a Disaster: Be Healthy and Safe

- Do not enter a building if you smell gas. Call 911. Do not light a match or turn on lights.
- Wear waterproof boots and gloves to avoid floodwater touching your skin.
- Wash your hands often with soap and clean water, or use a hand-cleaning gel with alcohol in it.
- Avoid tetanus and other infections by getting medical attention for a dirty cut or deep puncture wound.

Clean Your Home and Stop Mold

- Take out items that have soaked up water and that cannot be cleaned and dried.
- Fix water leaks. Use fans and dehumidifiers and open doors and windows to remove moisture.
- To remove mold, mix 1 cup of bleach in 1 gallon of water, wash the item with the bleach mixture, scrub rough surfaces with a stiff brush, rinse the item with clean water, then dry it or leave it to dry.
- Check and clean heating, ventilating, and air-conditioning systems before use.
- To clean hard surfaces that do not soak up water and that may have been in contact with floodwater, first wash with soap and clean water. Next, disinfect with a mixture of 1 cup of bleach in 5 gallons of water. Then allow to air dry.
- Wear rubber boots, rubber gloves, and goggles when cleaning with bleach. Open windows and doors to get fresh air. **Never mix bleach and ammonia.** The fumes from the mixture could kill you.

Protect Yourself from Carbon Monoxide Poisoning

Do not use generators, pressure washers, charcoal grills, camp stoves, or other fuel-burning devices indoors or in enclosed or partially enclosed areas such as garages, even with doors or windows open. Do not put these devices outside near an open door, window, or air vent. You could be poisoned or killed by carbon monoxide, an odorless, colorless gas from burning fuel such as gasoline, charcoal, or propane. Make sure a battery or electric powered CO detector is functional to alert you to dangerous levels of carbon monoxide in your home.
Keep Drinking Water and Food Safe

- Listen to public announcements to find out if local tap water is safe for drinking, cooking, cleaning, or bathing. Until the water is safe, use bottled water or boil or disinfect water.
- If a "boil water" advisory is in effect, do not drink tap water or use it to brush your teeth unless water has come to a rolling boil for at least 1 minute or is treated with unscented household chlorine bleach. To treat water, add 1/4 teaspoon (approximately 1.5 mL) bleach to 1 gallon of cloudy water or 1/8 teaspoon (approximately 0.75 mL) bleach to 1 gallon of clear water. Stir well and let it stand for 30 minutes before you use it.
- Do not eat food that smells bad, looks bad, or has touched floodwater. When in doubt, throw food out.

Prevent Electrical Injuries

- Do not touch fallen electrical wires. They may be live and could hurt or kill you.
- Turn off the electrical power at the main source if there is standing water. Do not turn on power or use an electric tool or appliance while standing in water.

Avoid Contact with Animals and Insects

- Reduce mosquito bites. Consider avoiding outdoor activities during the evening and early morning, which are peak biting times for many mosquitoes. Use an insect repellent with DEET or Picaridin.
- Stay away from wild or stray animals. Stray dogs may be hurt or afraid and may bite. Call local authorities to handle animals.
- Get rid of dead animals according to local guidelines.

Drive Safely

- Stop and look both ways at all intersections. Drive slowly and keep space between you and other vehicles. Watch out for trash on the road.
- Wear your seatbelt.
- Do not drive if you have been drinking.
FYI

Flood disasters Around the World

- **Johnstown flood**: The Johnstown, Pennsylvania flood occurring in 1889 was one of the worst historic floods in US history, killing over 2,200 innocent people.
- **Ohio River flood**: In 1913, the upper Mississippi and Ohio River valleys were destroyed by major flooding.
- **St. Francis Dam**: Located in Santa Paula, California, the St. Francis Dam failed causing a catastrophic flood in the region killing more than 450 people.
- **Rapid City flood**: Ending the lives of nearly 200 people within hours, Rapid City, South Dakota in 1972 is documented as one of the fastest and deadliest floods in the US.
- **Huang He River**: Possibly the world’s worst flood occurred in 1931, the Huang He (Yellow) River, China killing over a million and leaving over 80 million homeless. The river today is now known as the River of Sorrow.
- **Ru River, Banqiao Dam**: In 1975, the Ru River, Banqiao Dam of China collapsed along with a series of other dams due to a typhoon causing one of the worst dam collapses in history.
- **The Netherlands and England**: In 1099, coastal areas of England and the Netherlands experienced flooding due to high tides and storm waves sending a rippling 100,000 people to their deaths.
- **The Neva River, Russia**: Due to an ice dam clogging, Neva and surrounding cities flooded in 1824 killing over 10,000.
- **Heppner flood of 1903**: Flash floods hit the sleepy town of Willow Creek, Oregon destroying the town and ending the lives of nearly 200 people.
- **Big Thompson flood**: A flash flood occurs in Big Thompson Canyon located in Loveland, Colorado in 1976.
Salvaging Materials Safely

- **Flood recovery book**: This resource provides information on salvaging moldy materials and papers.
- **Photo salvaging**: Often old photos are water damaged. This guide provides helpful tips on how to save some of your favorite photos.
- **Flood damaged furniture**: A guide to help determine which furniture and appliances are worth attempting to salvage versus trashing.
- **Water damaged family heirlooms**: Ten useful tips for homeowners to salvage irreplaceable family heirlooms.
- **Flood damage family papers**: Historical documents, family papers, Wills and other documentation to salvage that is irreplaceable.
- **Salvage tip sheet**: A complete tip sheet on salvaging many different types of items.
- **Water damaged textiles**: A step-by-step guide on how to properly handle damaged and soiled items through the drying and cleaning process.